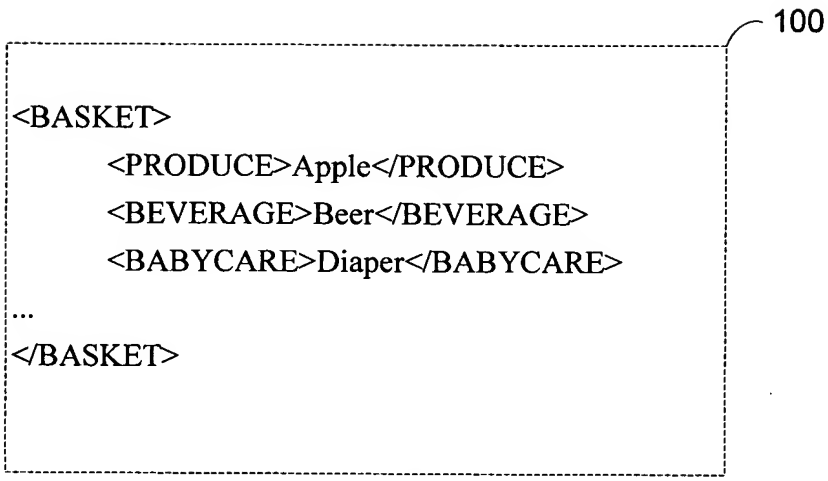

FIG. 1A
(Prior Art)

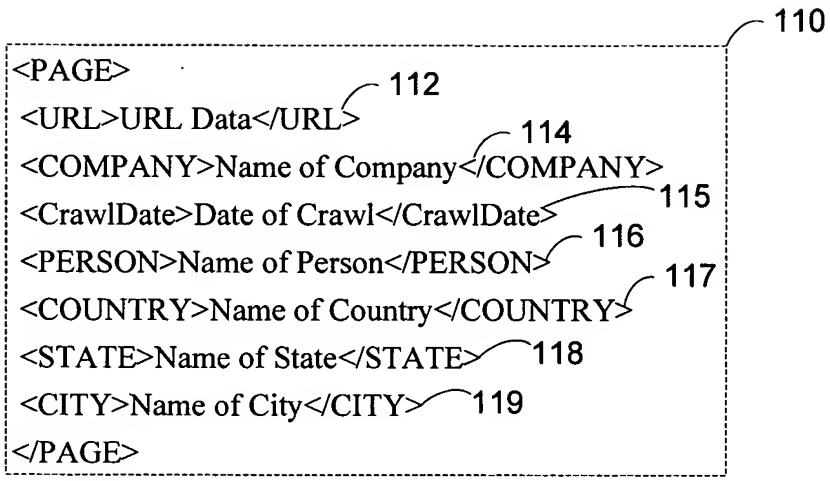

FIG. 1B
(Prior Art)

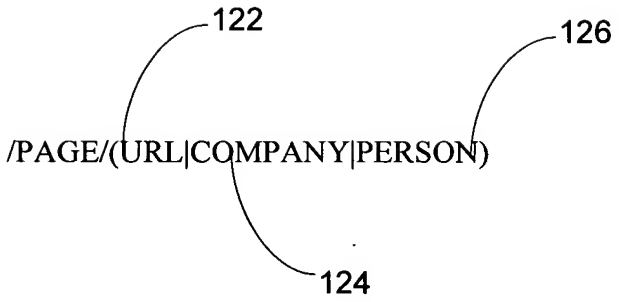

FIG. 1C
(Prior Art)

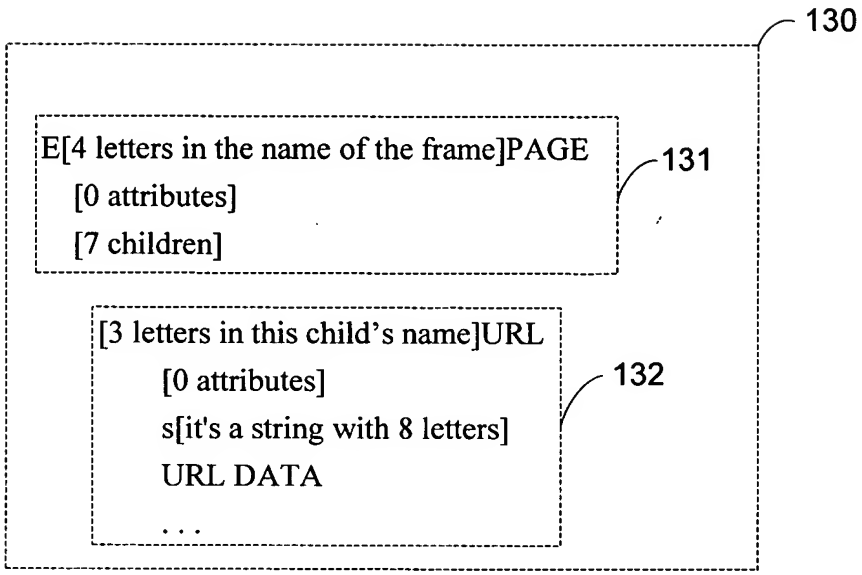

FIG. 1D
(Prior Art)

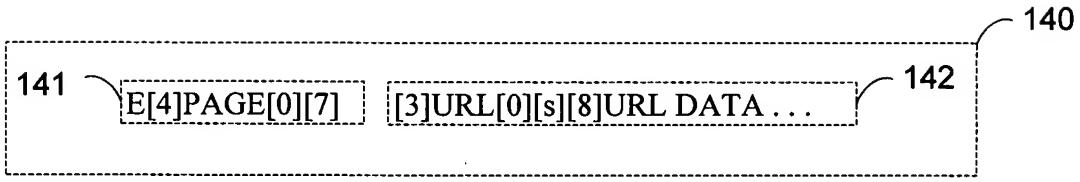

FIG. 1E
(Prior Art)

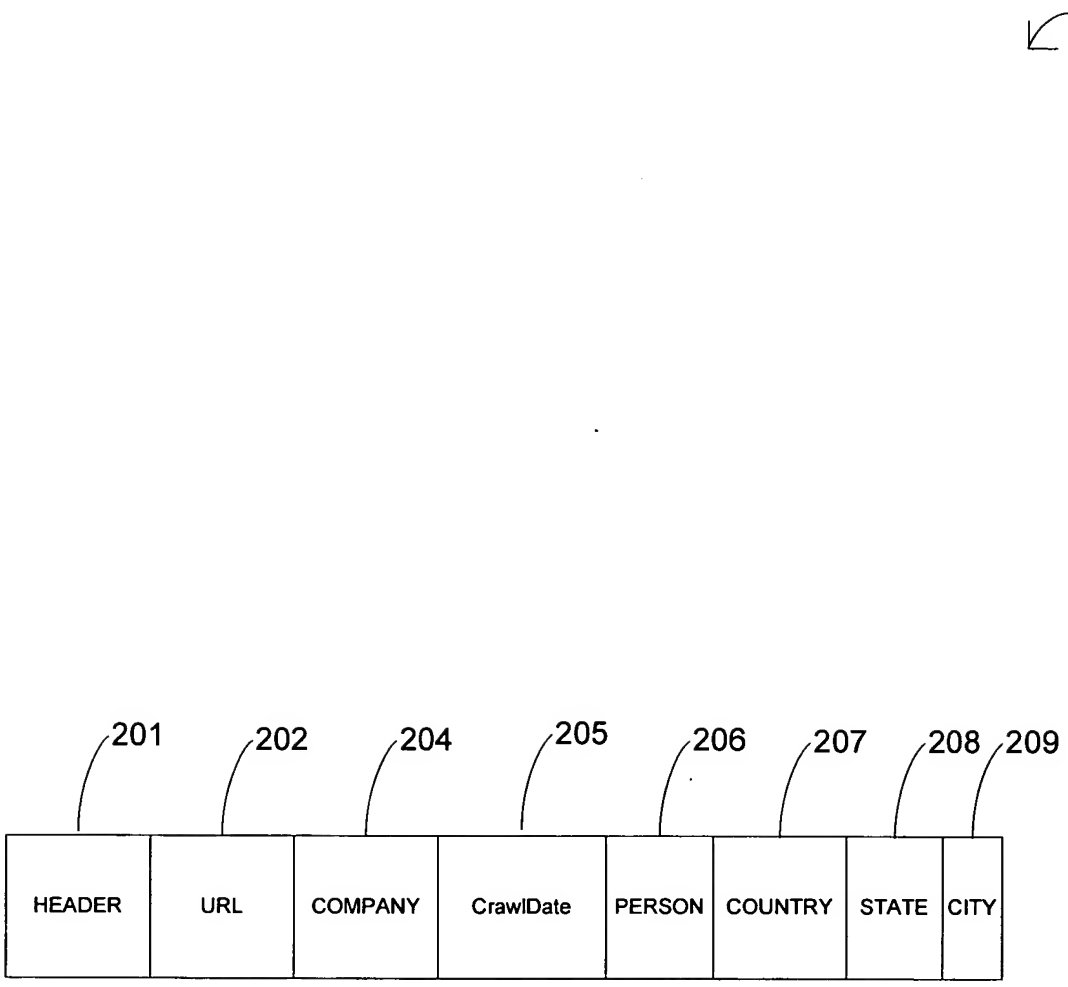
200
201
202
204
205
206
207
208
209
HEADER
URL
COMPANY
CrawlDate
PERSON
COUNTRY
STATE
CITY

FIG. 2A

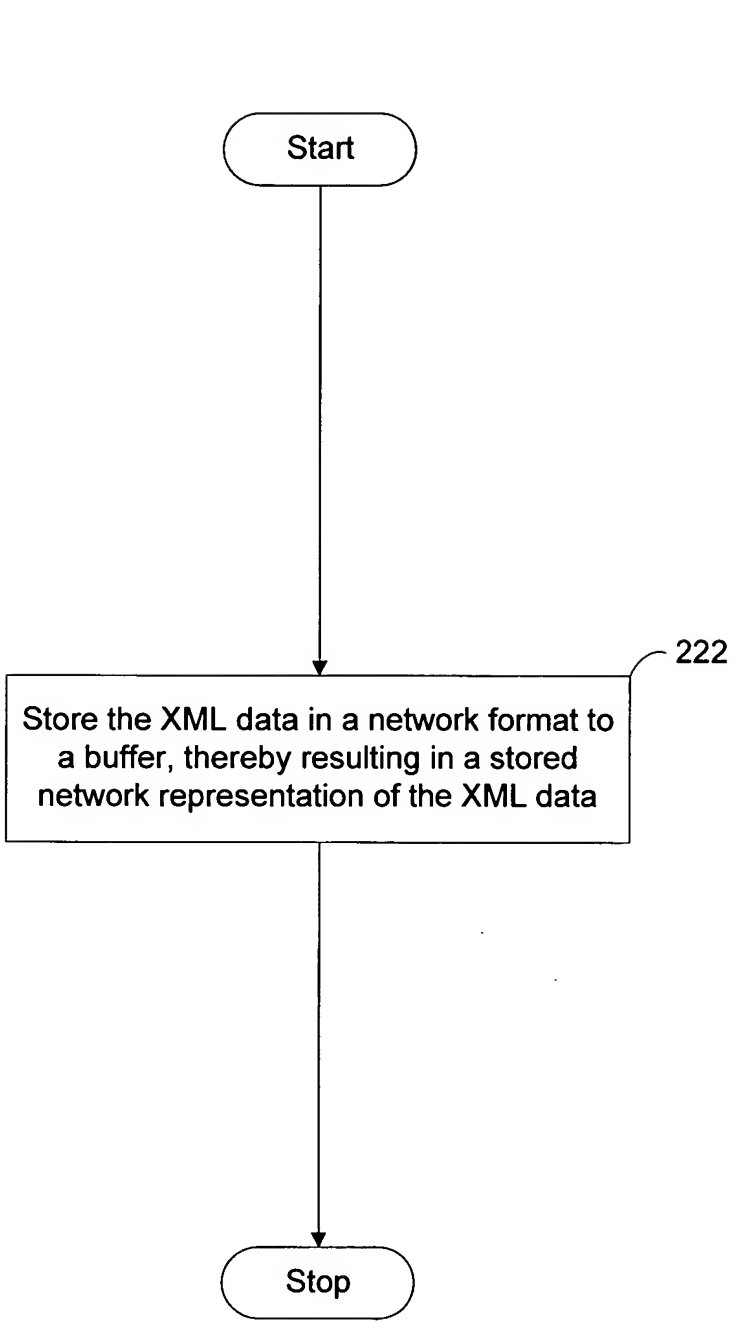
220
Start
222
Store the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data
Stop

FIG. 2B

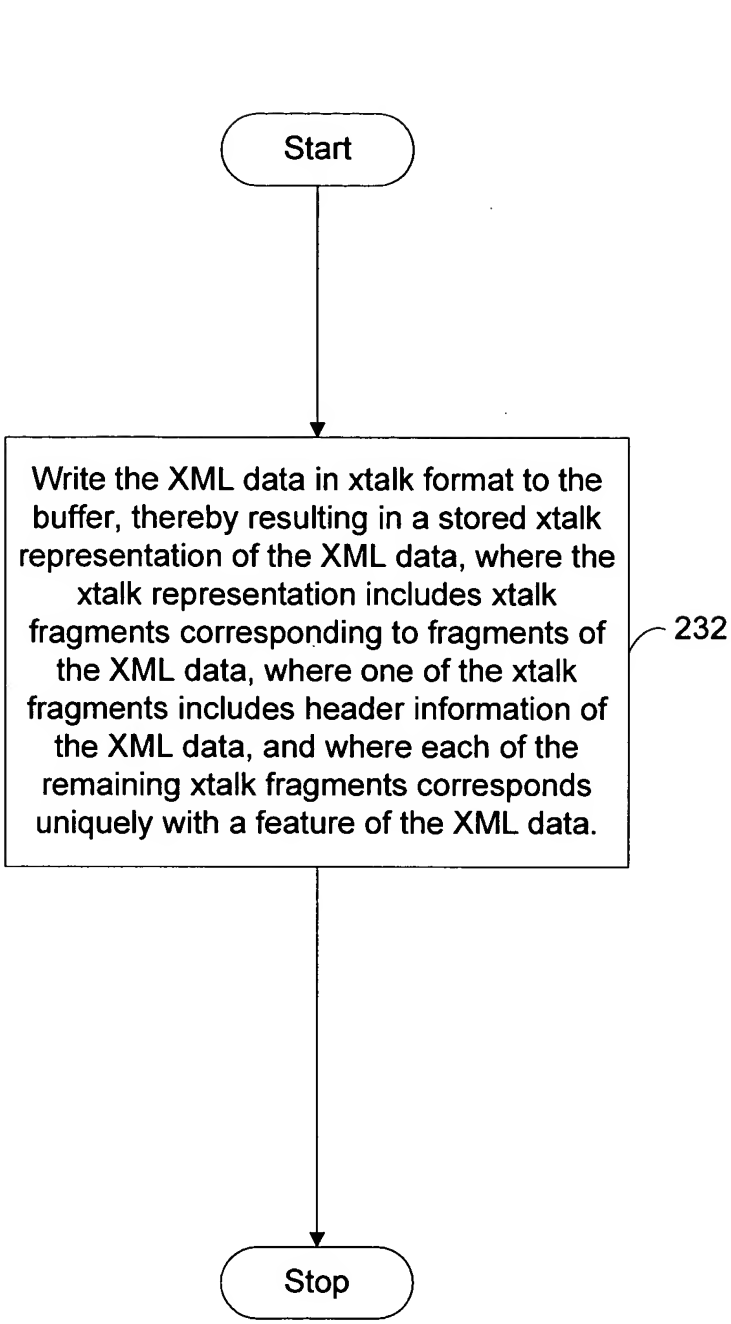
230
Start
Write the XML data in xtalk format to the buffer, thereby resulting in a stored xtalk representation of the XML data, where the xtalk representation includes xtalk fragments corresponding to fragments of the XML data, where one of the xtalk fragments includes header information of the XML data, and where each of the remaining xtalk fragments corresponds uniquely with a feature of the XML data.
232
Stop

FIG. 2C

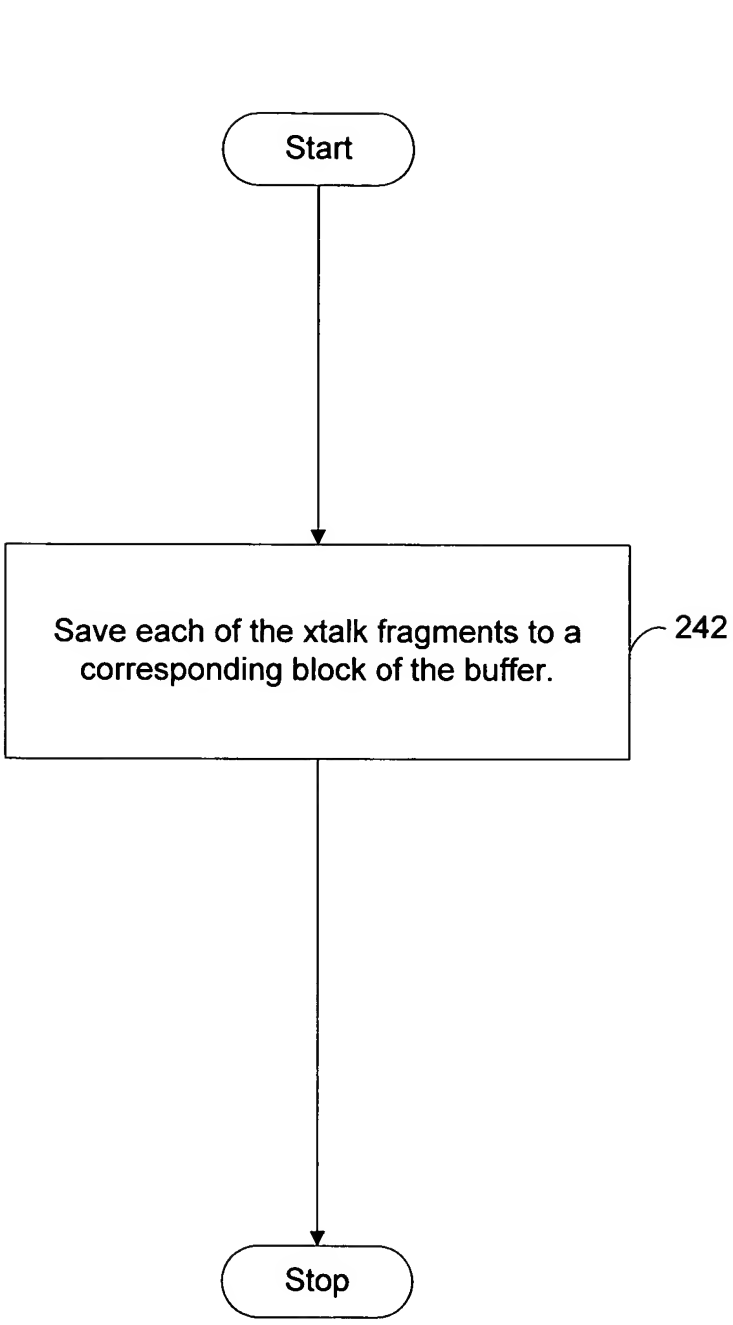
240
Start
Save each of the xtalk fragments to a corresponding block of the buffer.
242
Stop

FIG. 2D

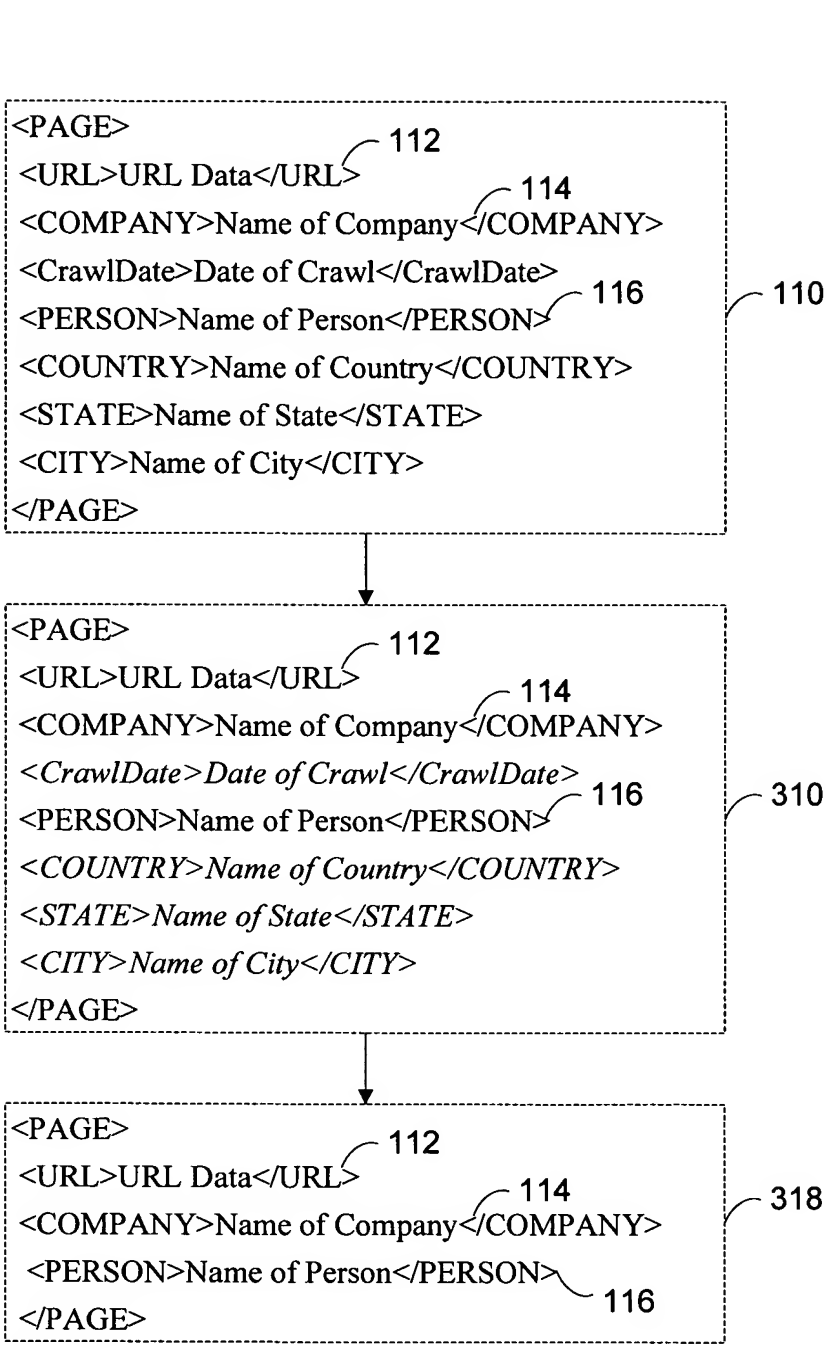
300
<PAGE>
<URL>URL Data</URL>
112
<COMPANY>Name of Company</COMPANY>
114
<CrawlDate>Date of Crawl</CrawlDate>
<PERSON>Name of Person</PERSON>
116
<COUNTRY>Name of Country</COUNTRY>
<STATE>Name of State</STATE>
<CITY>Name of City</CITY>
</PAGE>
110
<PAGE>
<URL>URL Data</URL>
112
<COMPANY>Name of Company</COMPANY>
114
<CrawlDate>Date of Crawl</CrawlDate>
<PERSON>Name of Person</PERSON>
116
<COUNTRY>Name of Country</COUNTRY>
<STATE>Name of State</STATE>
<CITY>Name of City</CITY>
</PAGE>
310
<PAGE>
<URL>URL Data</URL>
112
<COMPANY>Name of Company</COMPANY>
114
<PERSON>Name of Person</PERSON>
116
</PAGE>
318

FIG. 3A

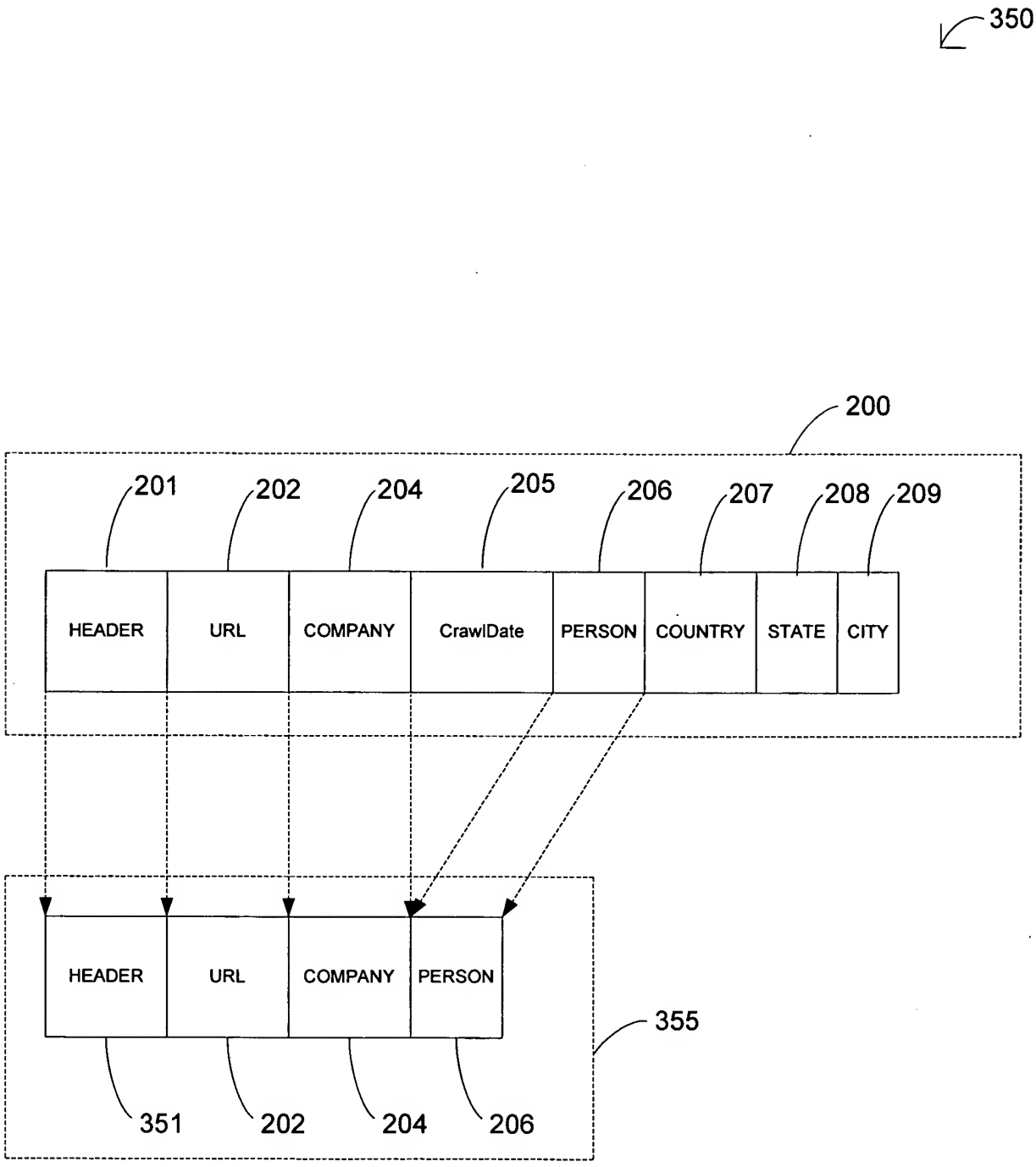
350
200
201
202
204
205
206
207
208
209
HEADER
URL
COMPANY
CrawlDate
PERSON
COUNTRY
STATE
CITY
HEADER
URL
COMPANY
PERSON
355
351
202
204
206

FIG. 3B

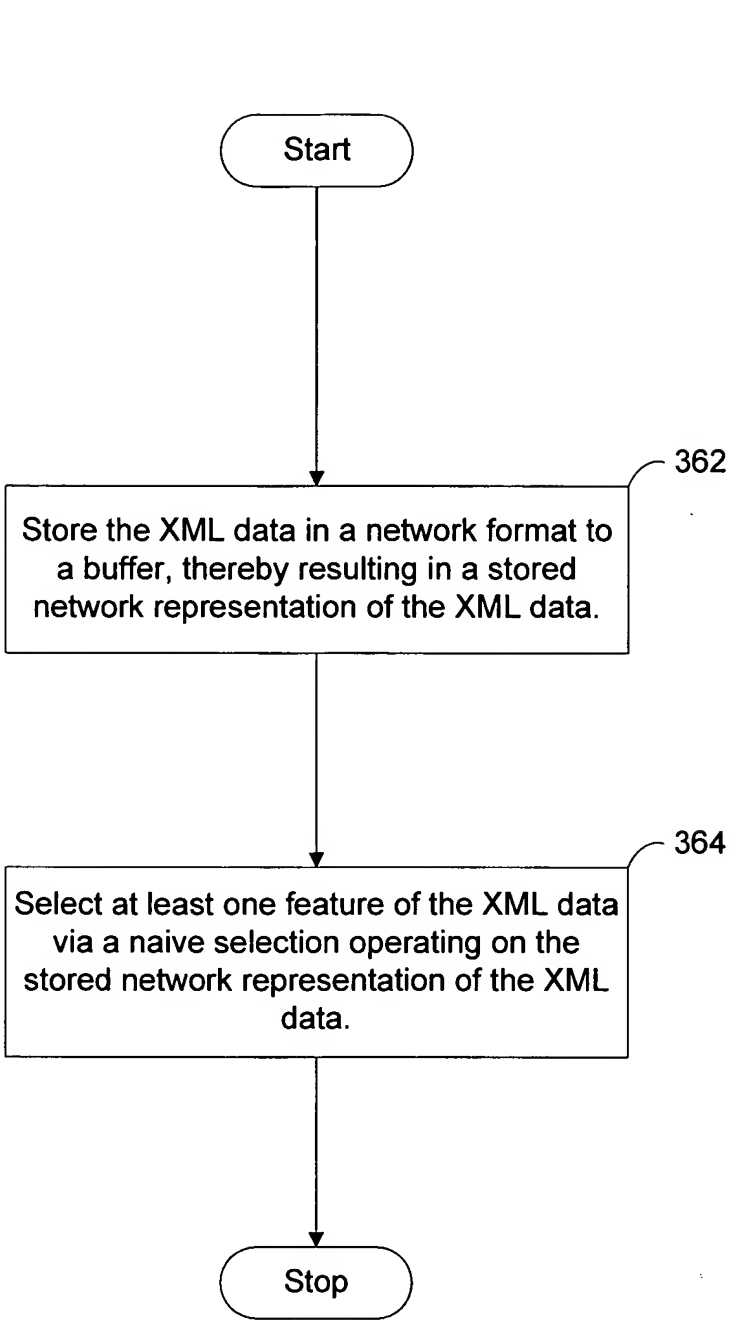
360
Start
362
Store the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data.
364
Select at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.
Stop

FIG. 3C

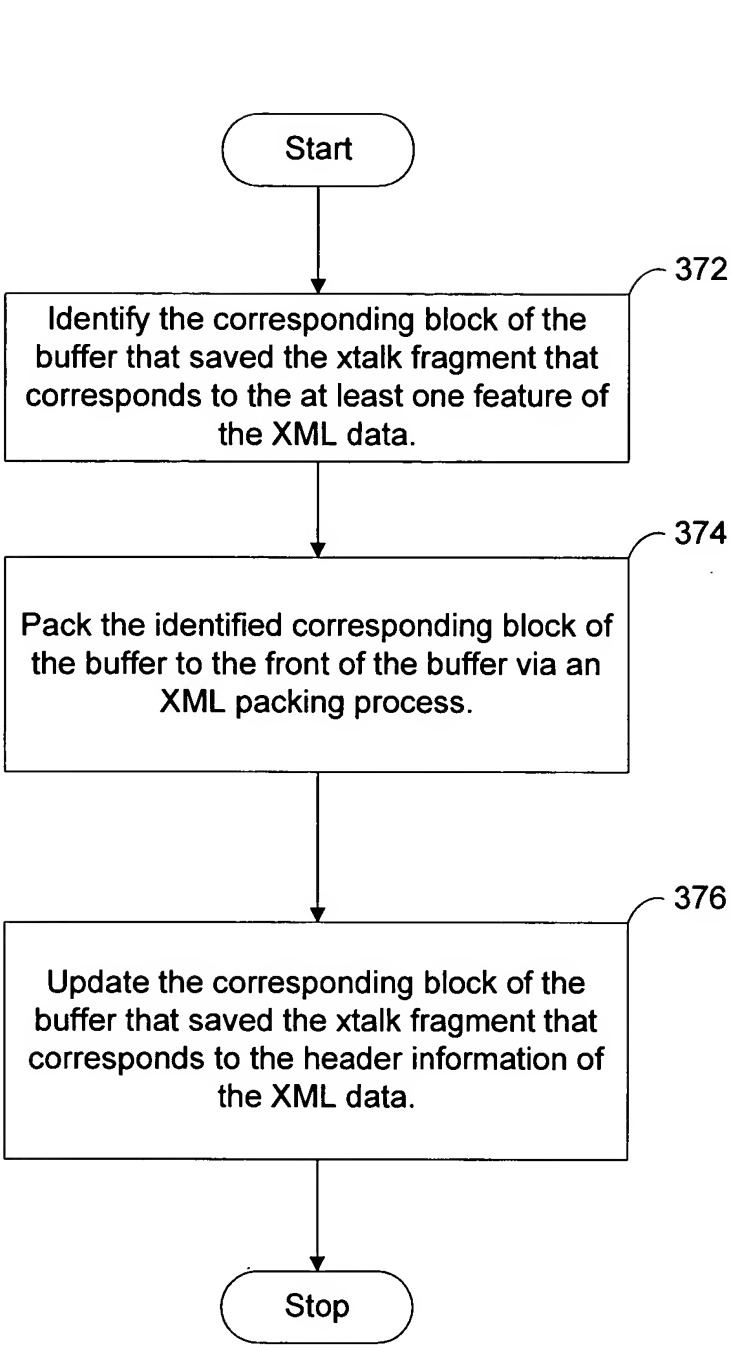
370
Start
372
Identify the corresponding block of the buffer that saved the xtalk fragment that corresponds to the at least one feature of the XML data.
374
Pack the identified corresponding block of the buffer to the front of the buffer via an XML packing process.
376
Update the corresponding block of the buffer that saved the xtalk fragment that corresponds to the header information of the XML data.
Stop

FIG. 3D

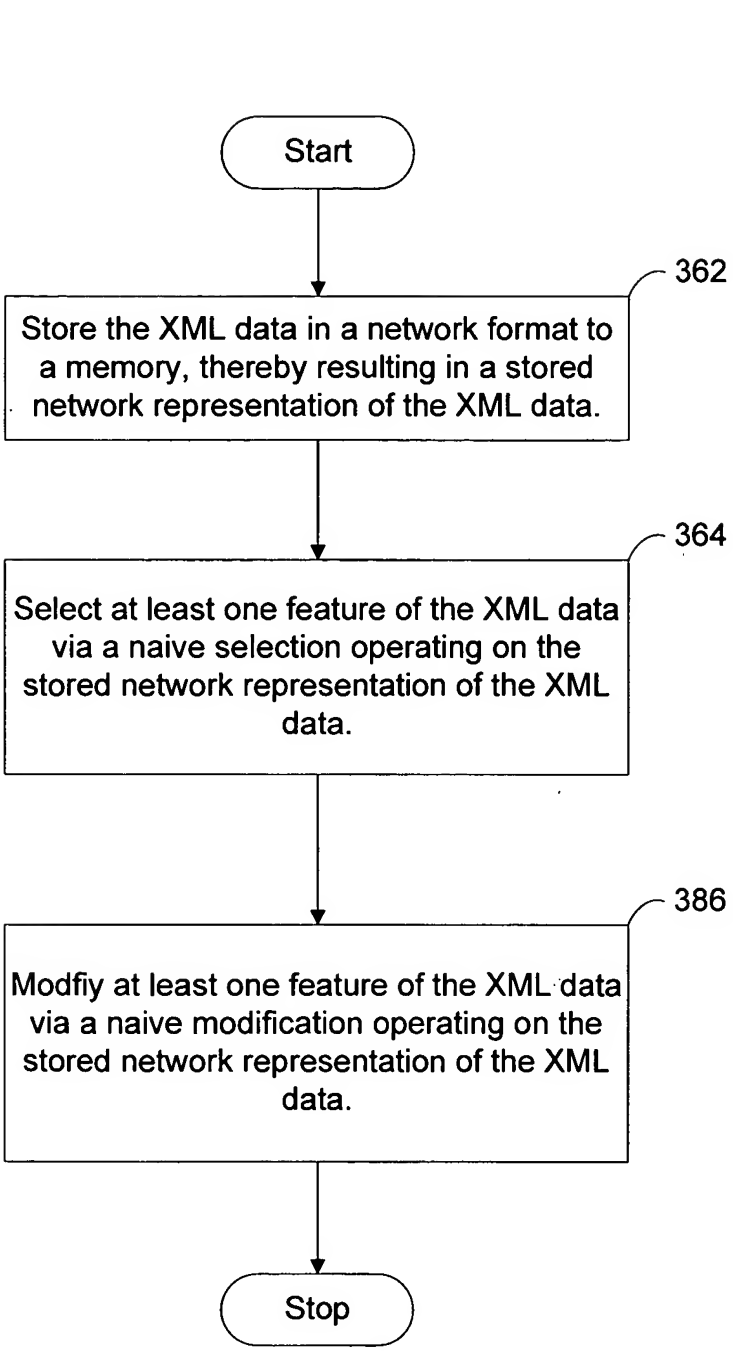
380
Start
362
Store the XML data in a network format to a memory, thereby resulting in a stored network representation of the XML data.
364
Select at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.
386
Modfiy at least one feature of the XML data via a naive modification operating on the stored network representation of the XML data.
Stop

FIG. 3E

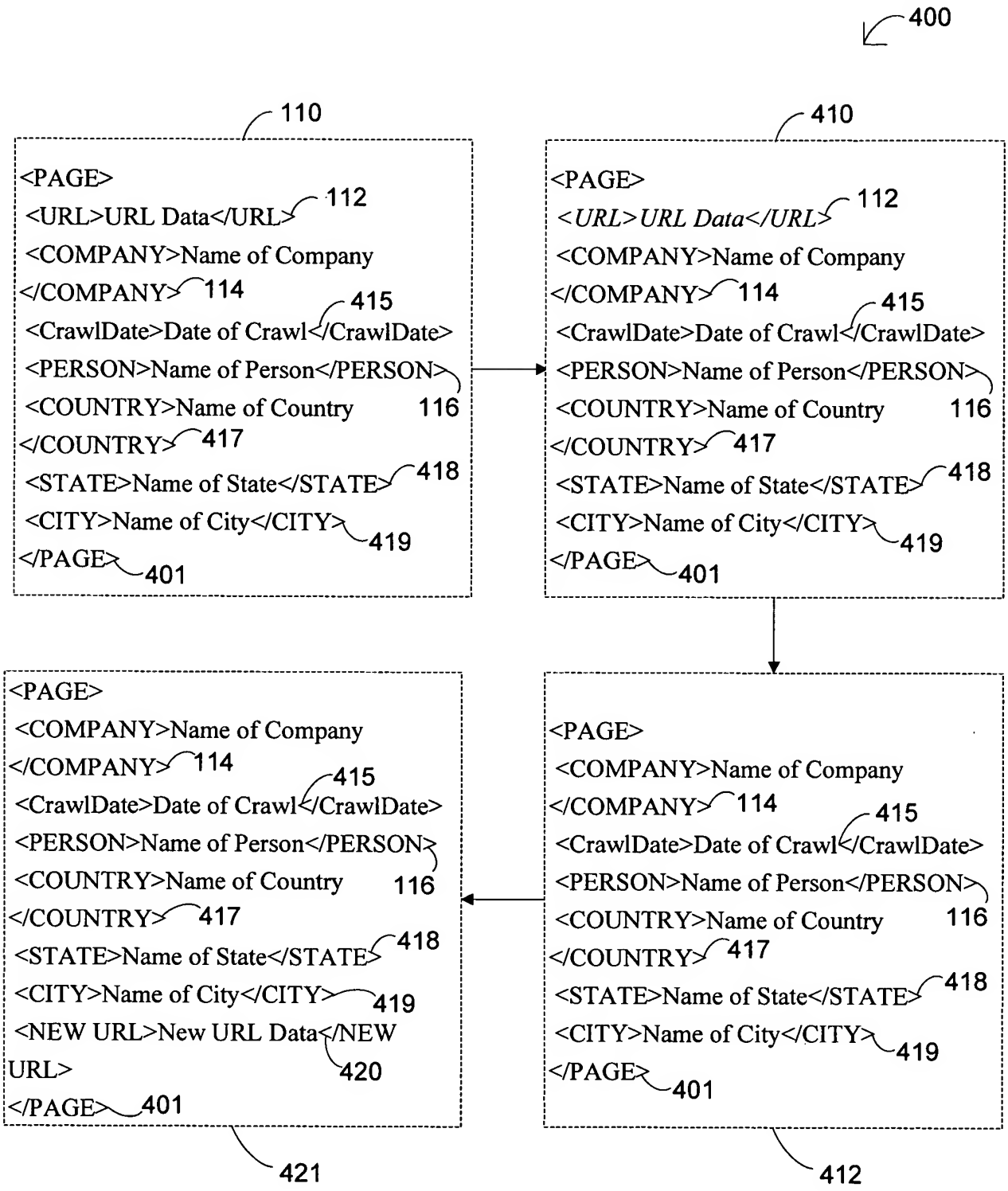
400
110
<PAGE>
<URL>URL Data</URL>
112
<COMPANY>Name of Company
</COMPANY>
114
<CrawlDate>Date of Crawl</CrawlDate>
415
<PERSON>Name of Person</PERSON>
<COUNTRY>Name of Country
116
</COUNTRY>
417
<STATE>Name of State</STATE>
418
<CITY>Name of City</CITY>
419
</PAGE>
401
410
<PAGE>
<URL>URL Data</URL>
112
<COMPANY>Name of Company
</COMPANY>
114
<CrawlDate>Date of Crawl</CrawlDate>
415
<PERSON>Name of Person</PERSON>
<COUNTRY>Name of Country
116
</COUNTRY>
417
<STATE>Name of State</STATE>
418
<CITY>Name of City</CITY>
419
</PAGE>
401
<PAGE>
<COMPANY>Name of Company
</COMPANY>
114
<CrawlDate>Date of Crawl</CrawlDate>
415
<PERSON>Name of Person</PERSON>
<COUNTRY>Name of Country
116
</COUNTRY>
417
<STATE>Name of State</STATE>
418
<CITY>Name of City</CITY>
419
<NEW URL>New URL Data</NEW
URL>
420
</PAGE>
401
421
<PAGE>
<COMPANY>Name of Company
</COMPANY>
114
<CrawlDate>Date of Crawl</CrawlDate>
415
<PERSON>Name of Person</PERSON>
<COUNTRY>Name of Country
116
</COUNTRY>
417
<STATE>Name of State</STATE>
418
<CITY>Name of City</CITY>
419
</PAGE>
401
412

FIG. 4A

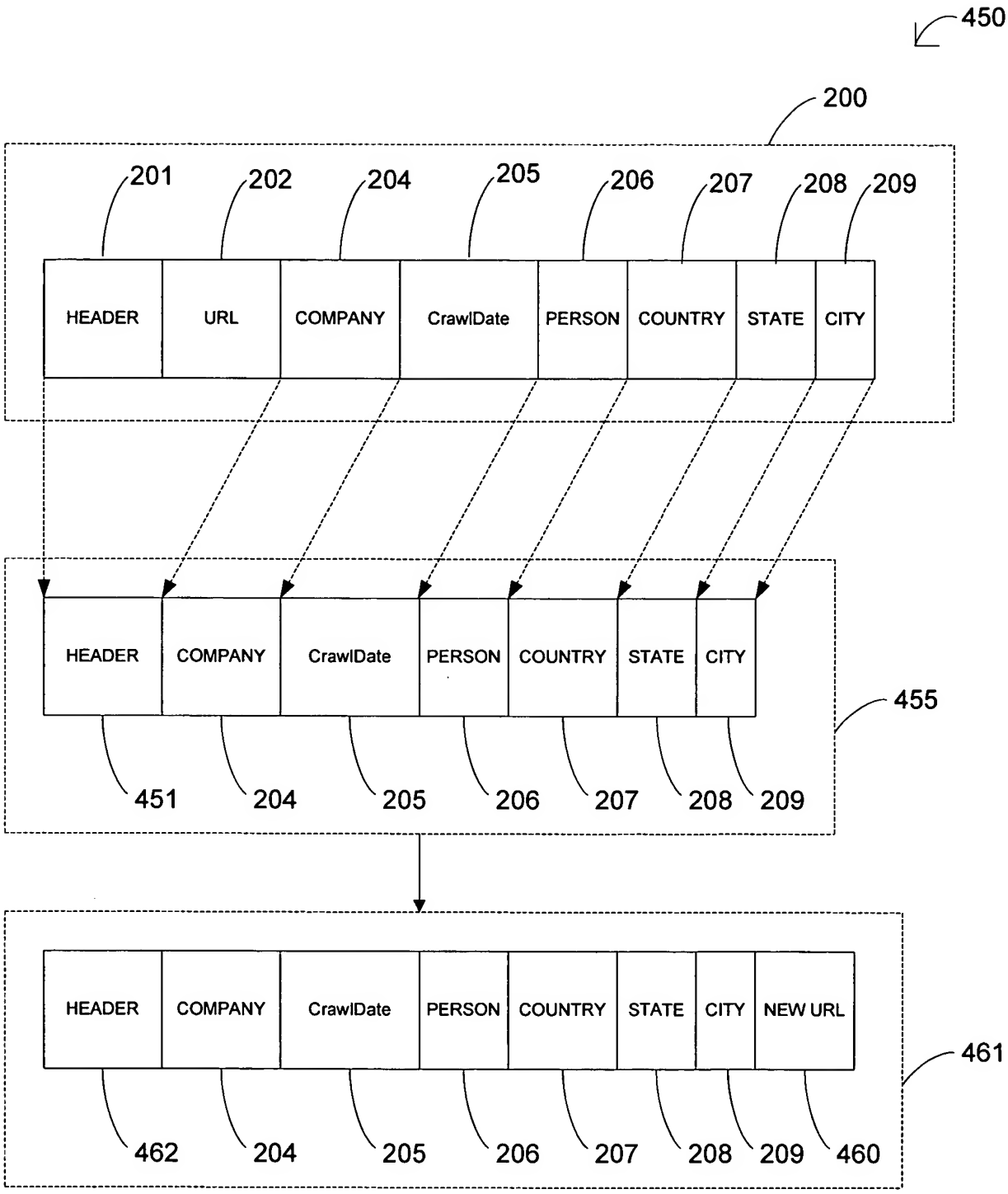
450
200
201
202
204
205
206
207
208
209
HEADER
URL
COMPANY
CrawlDate
PERSON
COUNTRY
STATE
CITY
HEADER
COMPANY
CrawlDate
PERSON
COUNTRY
STATE
CITY
455
451
204
205
206
207
208
209
HEADER
COMPANY
CrawlDate
PERSON
COUNTRY
STATE
CITY
NEW URL
461
462
204
205
206
207
208
209
460

FIG. 4B

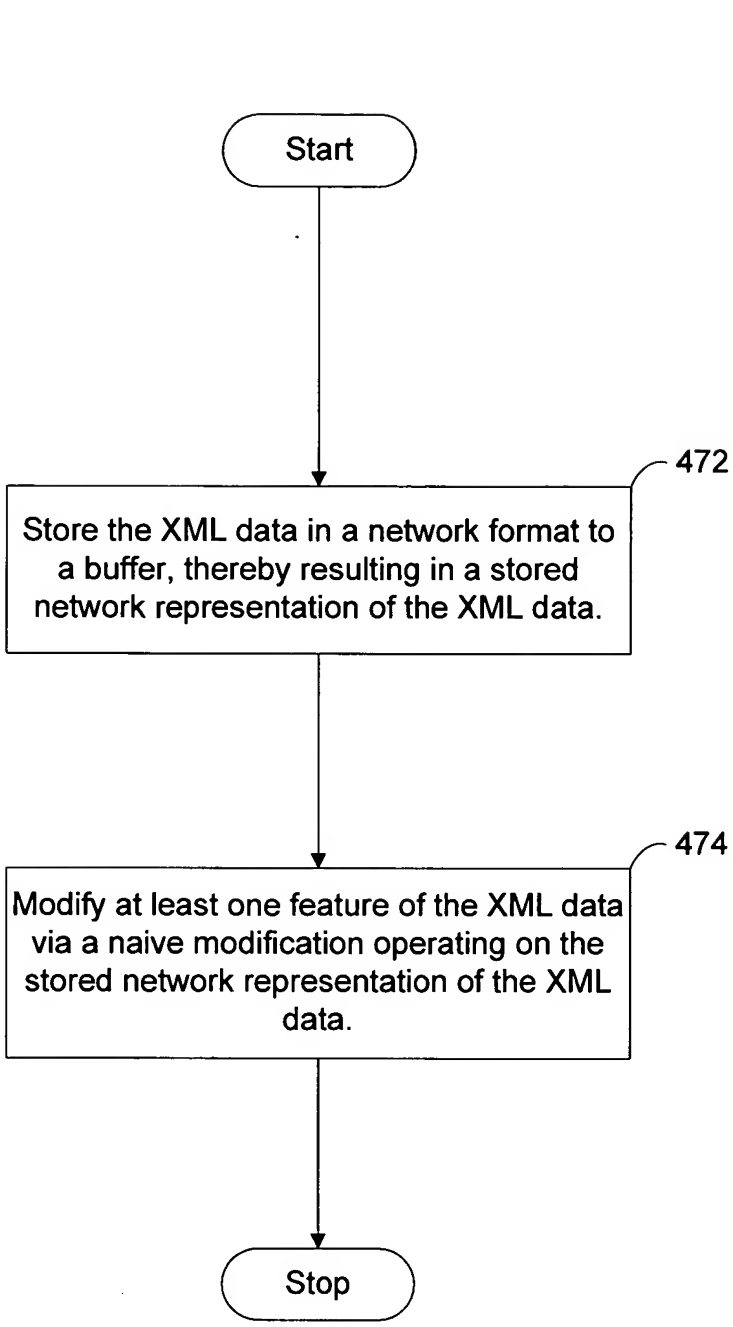
470
Start
472
Store the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data.
474
Modify at least one feature of the XML data via a naive modification operating on the stored network representation of the XML data.
Stop

FIG. 4C

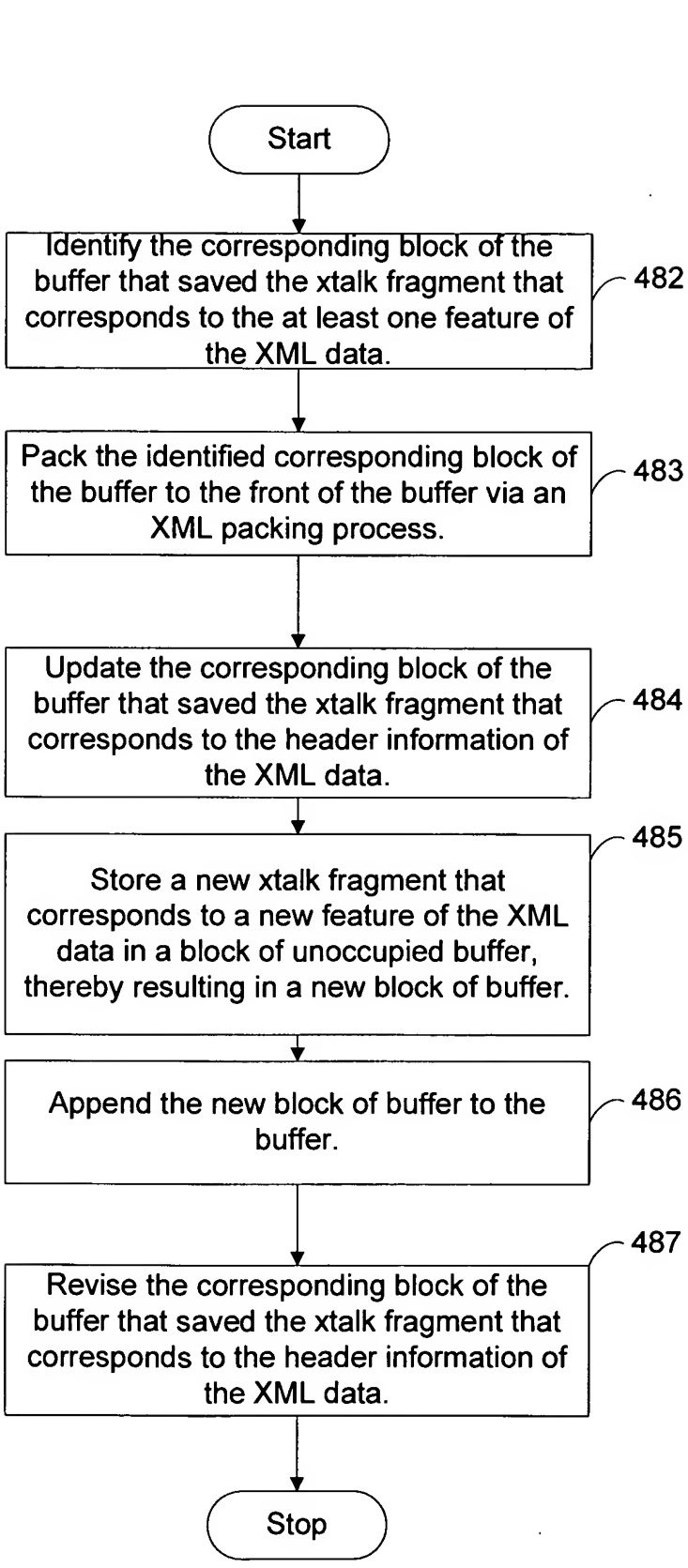
480
Start
Identify the corresponding block of the buffer that saved the xtalk fragment that corresponds to the at least one feature of the XML data.
482
Pack the identified corresponding block of the buffer to the front of the buffer via an XML packing process.
483
Update the corresponding block of the buffer that saved the xtalk fragment that corresponds to the header information of the XML data.
484
Store a new xtalk fragment that corresponds to a new feature of the XML data in a block of unoccupied buffer, thereby resulting in a new block of buffer.
485
Append the new block of buffer to the buffer.
486
Revise the corresponding block of the buffer that saved the xtalk fragment that corresponds to the header information of the XML data.
487
Stop

FIG. 4D

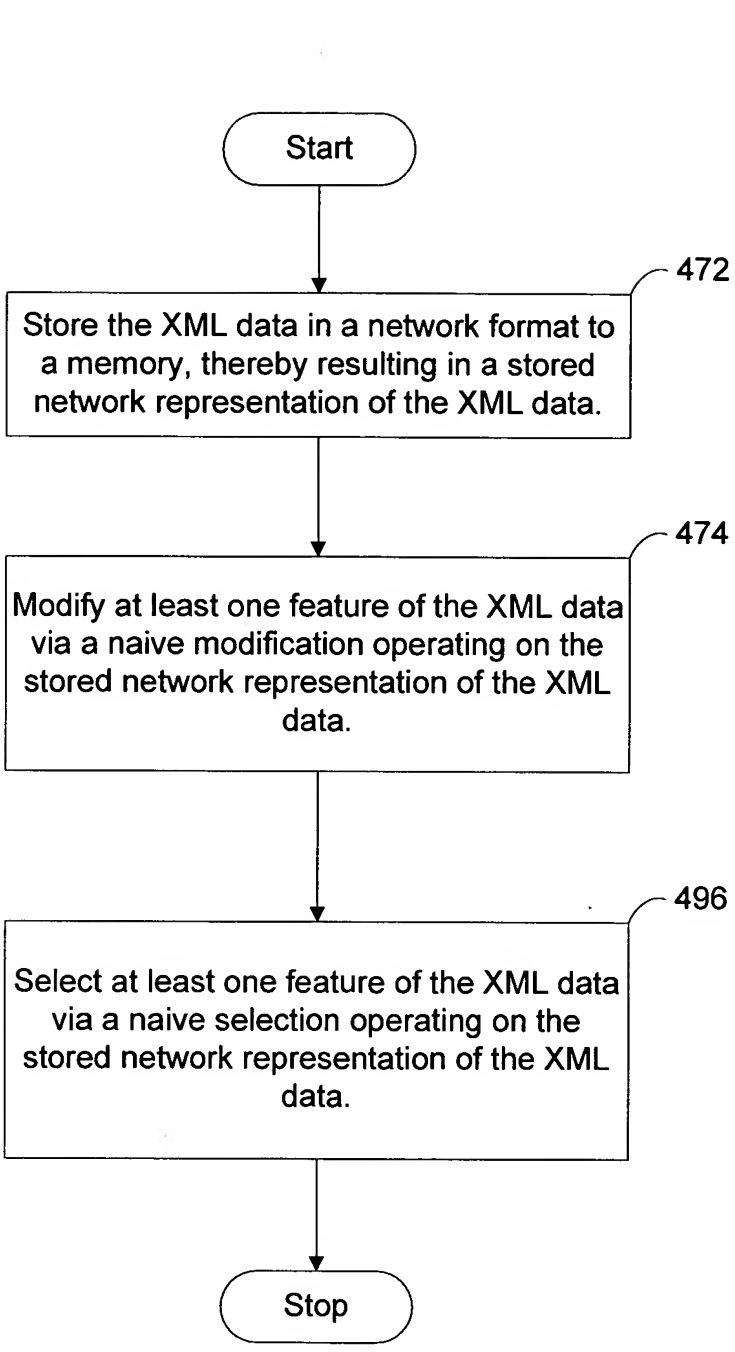
490
Start
472
Store the XML data in a network format to a memory, thereby resulting in a stored network representation of the XML data.
474
Modify at least one feature of the XML data via a naive modification operating on the stored network representation of the XML data.
496
Select at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.
Stop

FIG. 4E

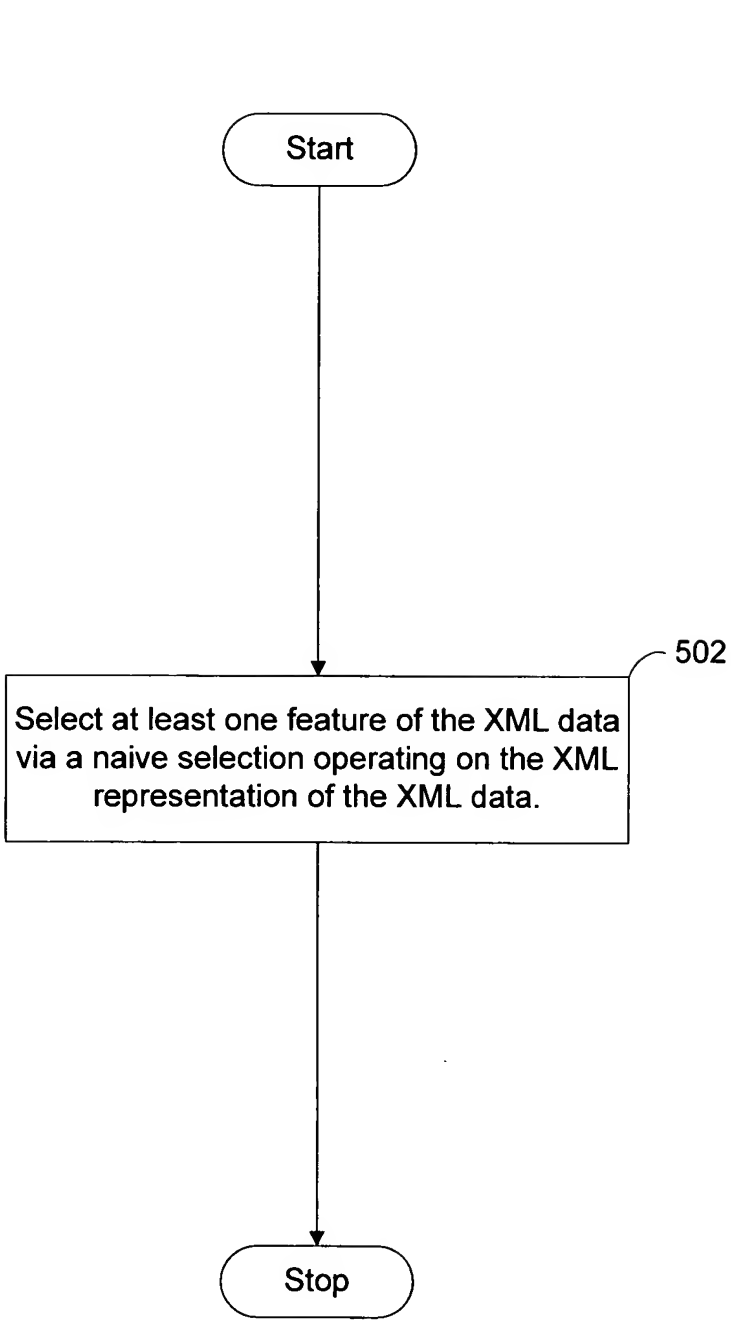
500
Start
502
Select at least one feature of the XML data via a naive selection operating on the XML representation of the XML data.
Stop

FIG. 5A

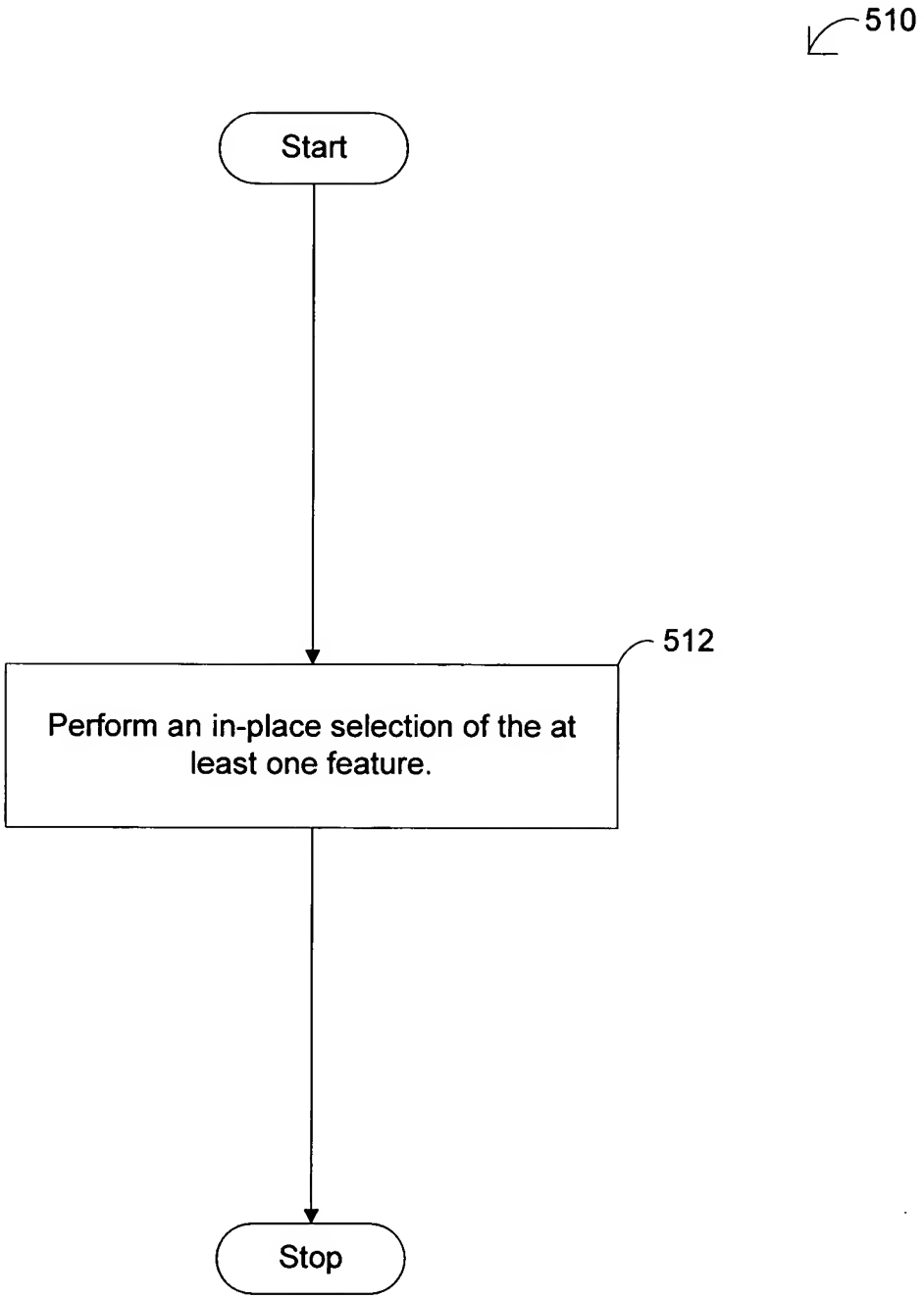
510
Start
512
Perform an in-place selection of the at least one feature.
Stop

FIG. 5B

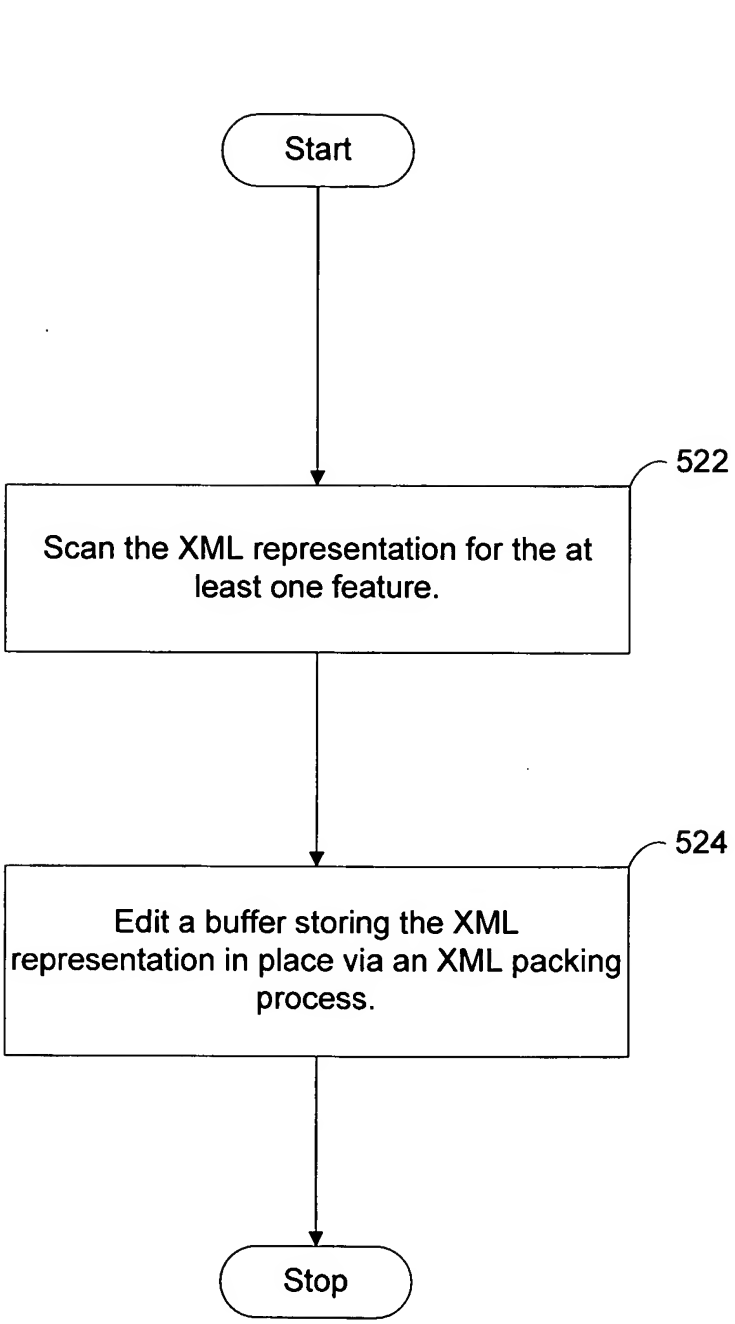
520
Start
522
Scan the XML representation for the at least one feature.
524
Edit a buffer storing the XML representation in place via an XML packing process.
Stop

FIG. 5C

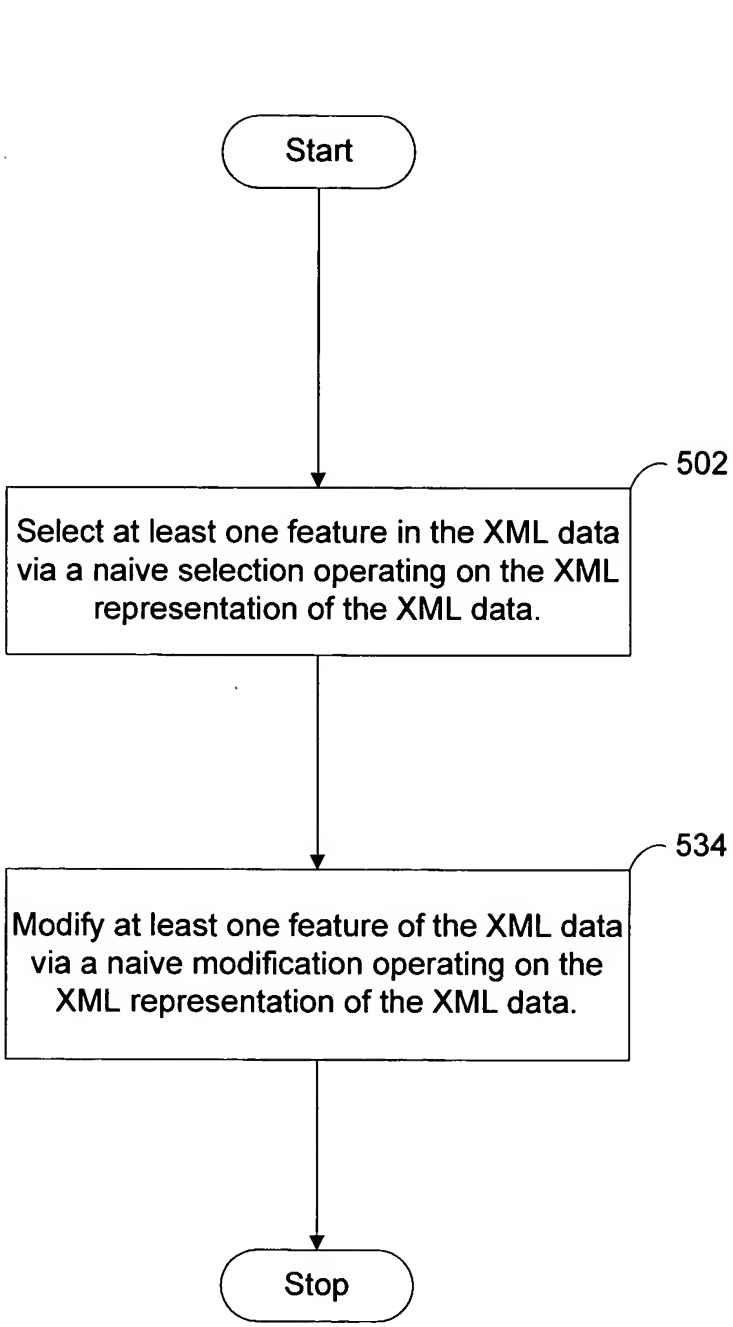
530
Start
502
Select at least one feature in the XML data via a naive selection operating on the XML representation of the XML data.
534
Modify at least one feature of the XML data via a naive modification operating on the XML representation of the XML data.
Stop

FIG. 5D

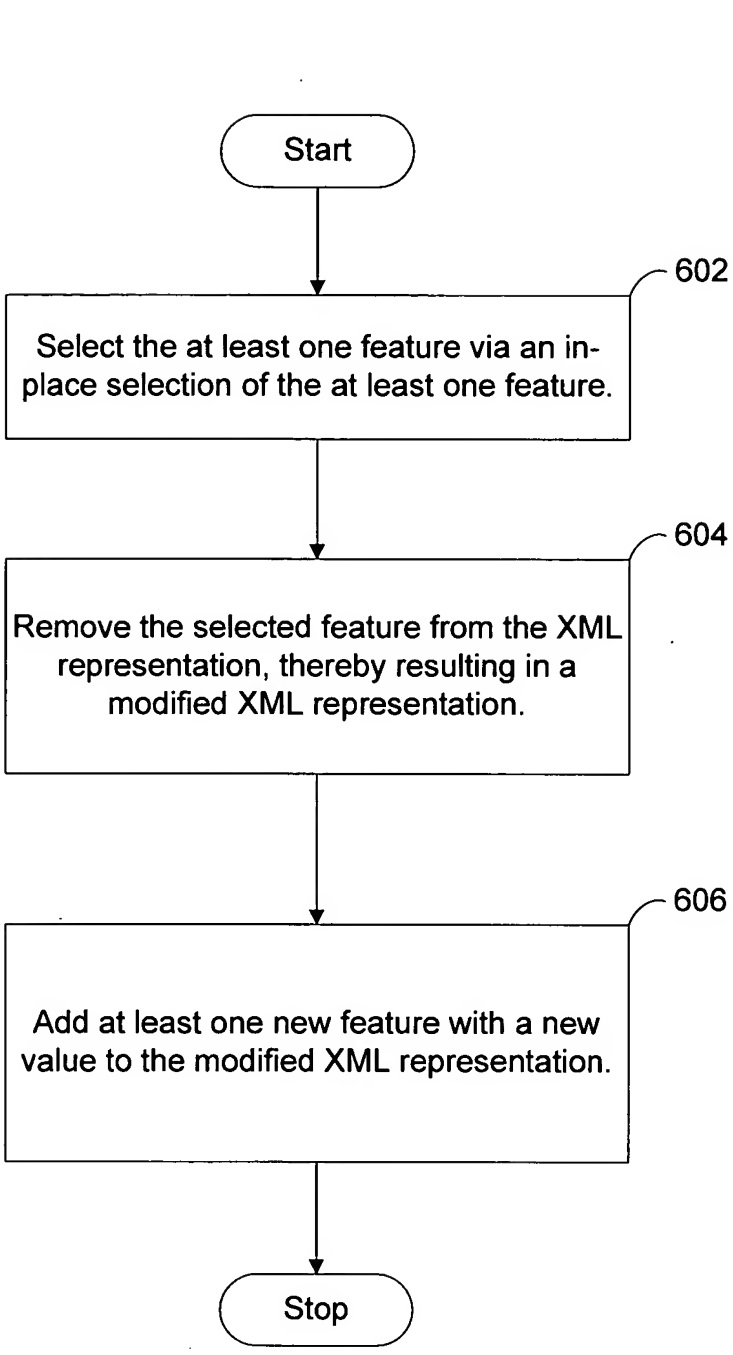
600
Start
602
Select the at least one feature via an in-place selection of the at least one feature.
604
Remove the selected feature from the XML representation, thereby resulting in a modified XML representation.
606
Add at least one new feature with a new value to the modified XML representation.
Stop

FIG. 6A

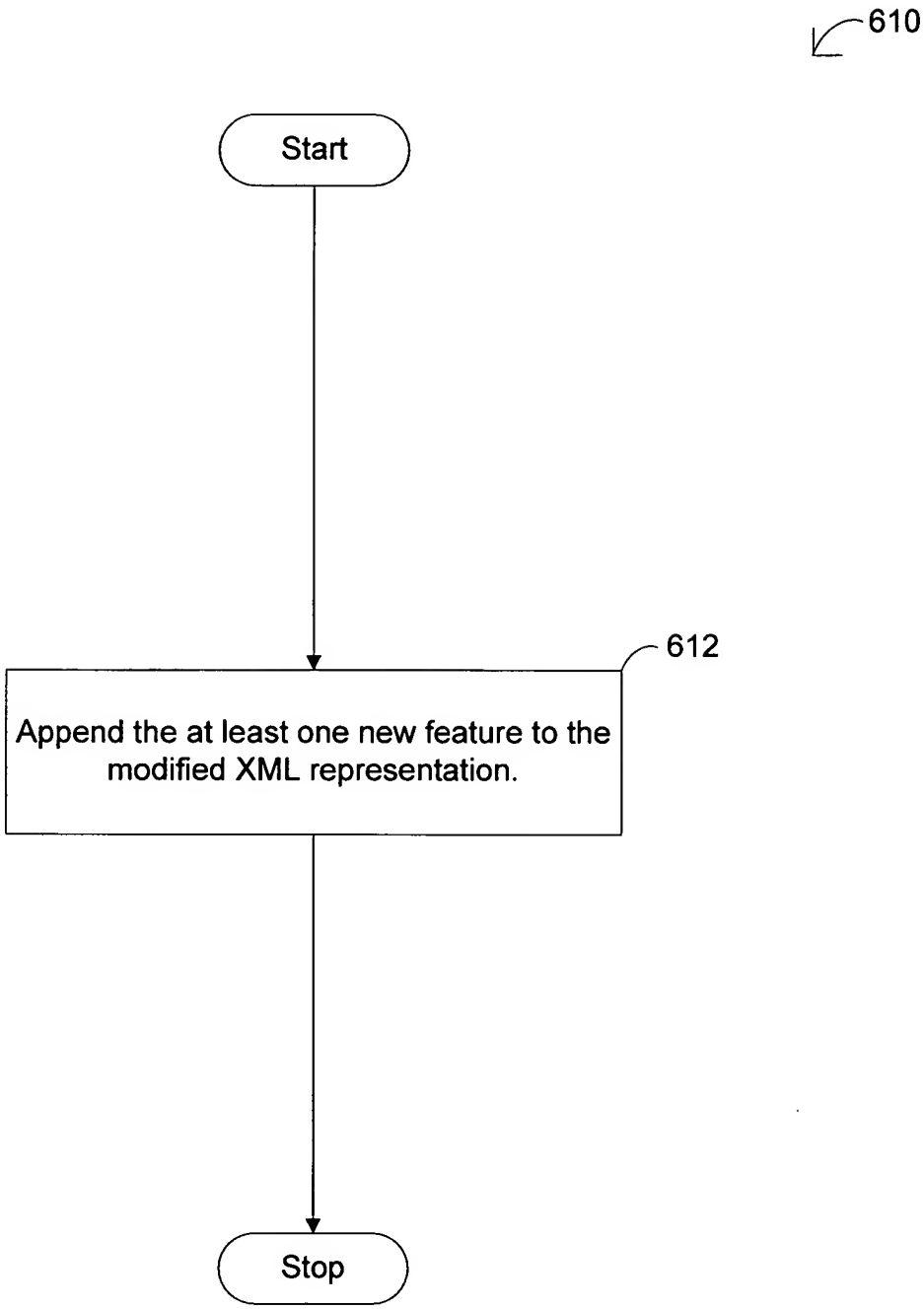
610
Start
612
Append the at least one new feature to the modified XML representation.
Stop

FIG. 6B

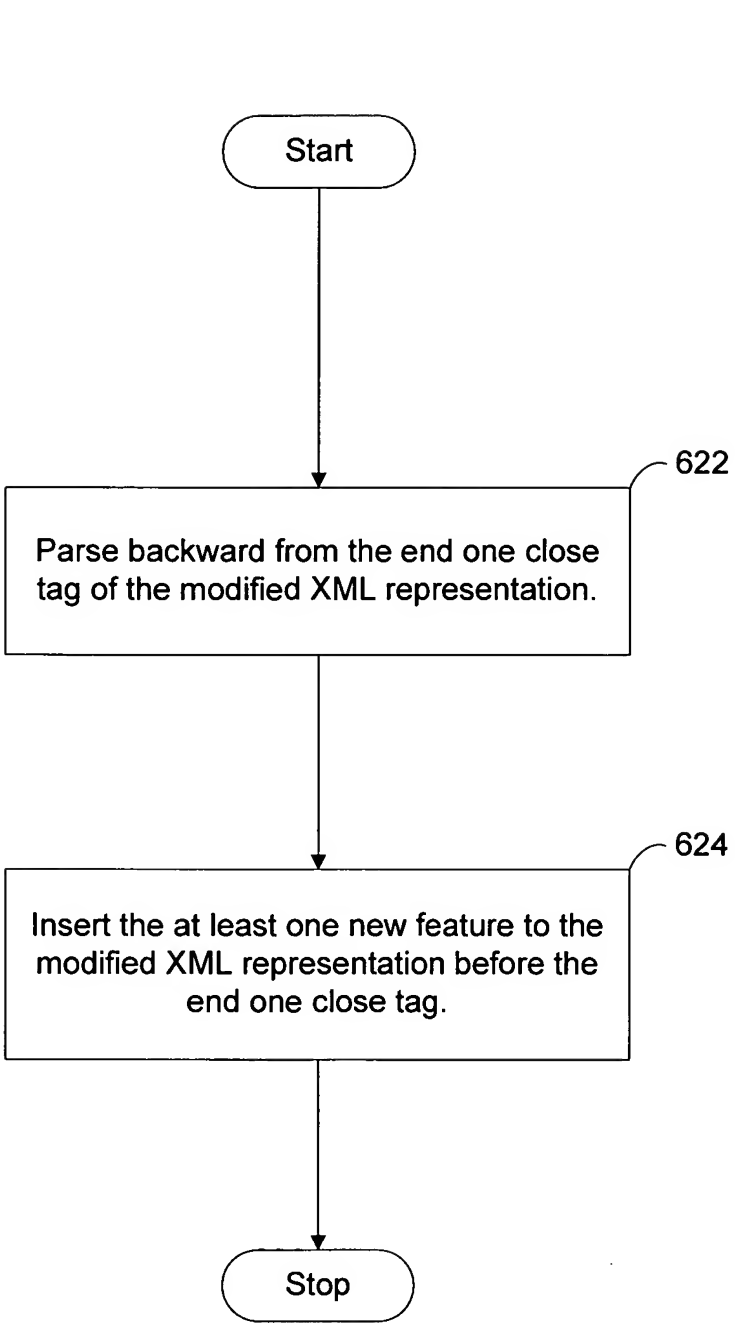
620
Start
622
Parse backward from the end one close tag of the modified XML representation.
624
Insert the at least one new feature to the modified XML representation before the end one close tag.
Stop

FIG. 6C

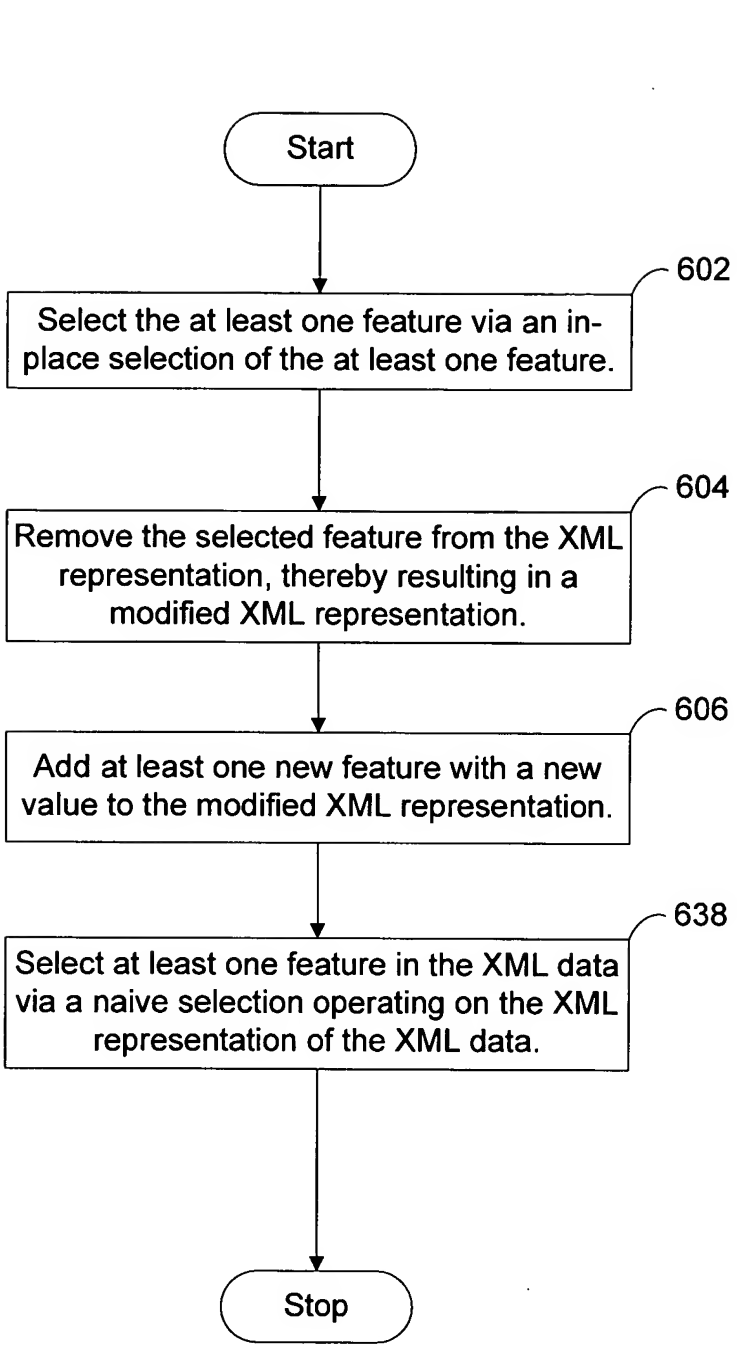
630
Start
602
Select the at least one feature via an in-place selection of the at least one feature.
604
Remove the selected feature from the XML representation, thereby resulting in a modified XML representation.
606
Add at least one new feature with a new value to the modified XML representation.
638
Select at least one feature in the XML data via a naive selection operating on the XML representation of the XML data.
Stop

FIG. 6D